Obstetric Fistula: Living With Incontinence and Shame

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Over 2 million women worldwide have an obstetric fistula, with the majority of cases occurring in resource-poor countries. Afflicted women tend to be young, primiparous, impoverished, and have little or no access to medical care. Incontinent of urine and/or stool, these women become ostracized and shunned by their community. Most obstetric fistulas are surgically correctible, although surgical outcomes have been poorly studied. Programs that improve nutrition, delay the age of marriage, improve family planning, and increase access to maternal and obstetric care are necessary to prevent obstetric fistula.
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Obstetric fistula (OF) has virtually been eliminated in industrialized nations, yet continues to plague women in resource-poor countries. The condition is entirely preventable; prolonged obstructed labor is estimated to account for 76% to 97% of OF (and is also a major cause of maternal mortality). The condition results when the descending fetus is unable to pass through the mother's pelvis. The fetal head enters the vagina, but the shoulders cannot pass through the bony pelvis (Figure 1). Without access to medical care to relieve the obstruction, the woman may remain in labor for days. The fetal head compresses the

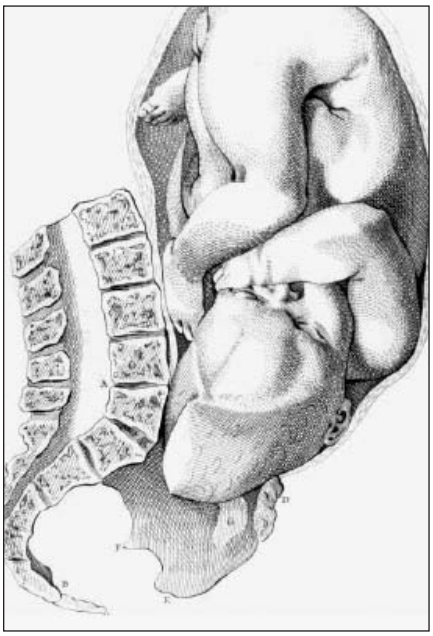

Figure 1. *Obstructed labor. Illustration from* A Sett of Anatomical Tables, With Explanations, and An Abridgment, of the Practice of Midwifery, *by William Smellie, printed in 1754.*

Figure 2. *Simple vesicovaginal fistula. A metal catheter through urethra is visible through destructed bladder. Copyright © Worldwide Fistula Fund, used by permission.*

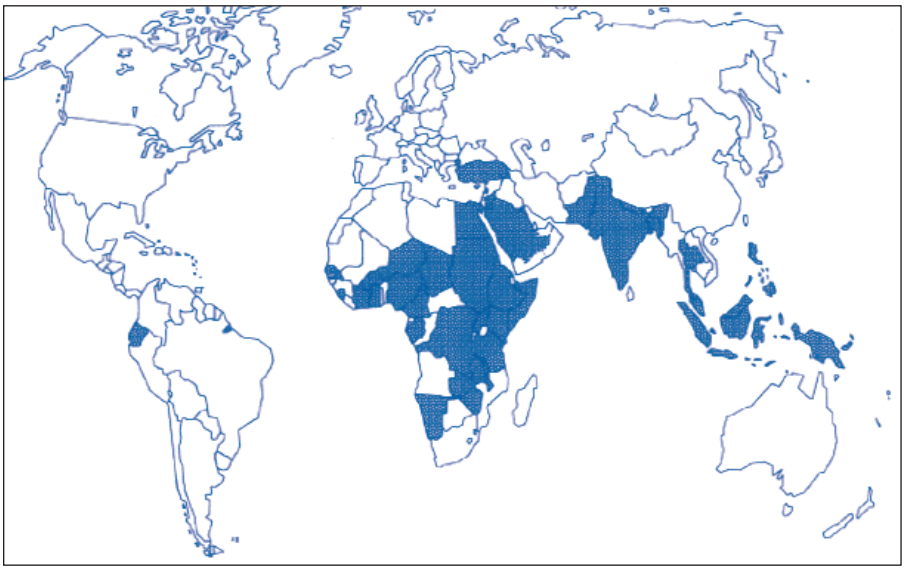

Figure 3. *World Health Organization map of obstetric fistula. Reproduced with permission from Wall LL, Arrowsmith SD, Briggs ND, Lassey A.* Urinary Incontinence in the Developing World: The Obstetric Fistula. *Geneva, Switzerland: World Health Organization; 1991. Available from http://www.fistulafoundation.org/pdf/UIDW.pdf. Accessed November 13, 2008.*

vaginal tissue and widespread ischemic damage of the soft tissue occurs. Once fetal death from asphyxiation occurs, the dead fetus is expelled. The necrotic tissue sloughs off, leaving a hole between the vagina and bladder (vesicovaginal) or vagina and rectum (rectovaginal) (Figure 2). The woman develops incontinence of urine and/or stool, and is affected by multiple devastating medical and psychosocial sequalae.

Epidemiology

There are no worldwide, comprehensive surveys that estimate the incidence and prevalence of OF. The vast majority of known OF cases occurs in parts of sub-Saharan Africa and South Asia (Figure 3). The World Health Organization (WHO) estimates that more than 2 million women live with the condition and up to 100,000 new cases occur each year.[1] However, because many of the women who are deeply affected by OF are unable to access care, these figures may be severe underestimates. Indeed, one study has found that 1 million women are affected by OF in Nigeria alone, and another suggests that 70,000 new cases occur annually in Bangladesh.[2]

History

This complication of labor has likely existed for as long as women have been giving birth: vesicovaginal fistula (VVF) is mentioned in ancient Hindu writings on medicine, and a VVF was found in the mummy of Queen Henhenit, the wife of 11th dynasty pharaoh Mentuhotep II, who reigned about 2050 BCE.[3] In 1845, OF was described by Dr. J. Marion Sims as "hopelessly incurable."[4] Upon encountering a young slave woman with OF and initially resolving the condition as irremediable, Sims then dedicated the next 4 years to developing surgical solutions to this condition. Using slave women as his subjects, he was able to successfully repair a VVF in 1849. Due to significant medical advances, including safer cesarean

deliveries and the development of obstetrics into a scientific specialty, by the mid-1900s OF practically disappeared in the industrialized world.

Who Is at Risk?

Women who are afflicted with OF today are not much different from women with OF prior to the 1900s: they are young, primiparous, poor, uneducated, and with virtually no access to obstetric care. Child marriage remains common in resource-poor nations, putting these girls at high risk for premature childbearing and cephalopelvic disproportion, which can cause obstructed labor. A very high percentage of girls in Ethiopia (25%), Uganda (42%), and Mali (45%) are married and give birth by the age of 18. Their risk of fistula development is as high as 88%.[5] Malnutrition also leads to poor bone development and orthopedic disorders that can contribute to complications during childbirth. Other major contributors to OF are the lack of family planning, prenatal care, and emergency obstetric care, as well as poor transportation and limited awareness by women who are at risk. There is a stunning lack of resources for women who have developed fistulas.

Complications of Obstructed Labor

Women who develop OF secondary to prolonged obstructed labor are affected by multiple devastating medical and psychosocial sequelae. Along with urinary and/or fecal incontinence, they are at risk for other urologic diseases such as renal failure, gynecologic sequelae such as vaginal stenosis and infertility, and neurologic disorders including foot drop. Perhaps the most devastating consequence is the impact OF can have on their psychosocial life. These women are subject to serious depression. Due to their odor, the constant dribble of urine down their legs, and the puddles of urine that surround their feet if they stand for too long, they are shunned by their families and are physically isolated from their community. Some women are kept in separate huts away from the rest of the village, or they are divorced and left to fend for themselves. Others are forced to leave their villages and become beggars. This isolation and abandonment have led some women to suicide.[2]

Classification of OF

Although there are multiple methods of classifying OF, 2 main classification systems exist today. The first classifies OF according to the anticipated difficulty of repair. A fistula with a *good prognosis* must be the first attempted repair of a single fistula (VVF), less than 4 cm in size, with no urethral involvement, no scarring of the vaginal tissue, a minimal degree of tissue loss, and intact ureters. A *complicated prognosis* includes multiple fistulas, rectovaginal fistula (RVF) or mixed VVF/RVF that involve the cervix, fistula greater than 4 cm in size, urethral involvement, vaginal scarring, complete separation of the urethra from the bladder, extensive tissue loss, ureteral drainage into the vagina, stones in the bladder, and/or failed surgical attempts.[2] The second classification defines the fistula according to what surgery is necessary. A subclassification of this system describes the size of the fistula: small (< 2 cm), medium (2-3 cm), large (4-5 cm), and extensive (> 6 cm) (Table 1).[6]

Table 1
Classification of Fistula According to Type of Surgery Required Based on Anatomic/Physiologic Location

I	Fistula not involving the closing mechanism
II	Fistula involving the closing mechanism
	A Without (sub)total urethral involvement
	a Without circumferential defect*
	b With circumferential defect
	B With (sub)total urethral involvement
	a Without circumferential defect
	b With circumferential defect
III	Miscellaneous, eg, ureteric and other exceptional fistula
	Subclassification according to size
	Small, < 2 cm
	Medium, 2-3 cm
	Large, 4-5 cm
	Extensive, ≥ 6 cm

*A circumferential defect is the complete separation of the urethra from the bladder.
Data from Waaldijk K.[6]

Treatment Options

About 80% to 90% of women with VVF can potentially be cured by simple vaginal surgery.[7] However, transportation to surgical centers is physically tricky (what method of transportation would allow an incontinent woman in a vehicle?) and financially challenging. The cost of surgery for a poor woman or girl who has been abandoned by her village is nearly unattainable.

The outcomes of surgical intervention are not well known, as the various fistula classification systems and the definition of surgical success make it difficult to characterize surgical outcomes. One prospective cohort study in Niger of 73 women who underwent primary surgical repairs of VVF resulted in a 44% successful fistula closure rate, with 26% of patients lost to follow-up.[8] Another retrospective, cross-sectional study of 252 operations at the Monze Mission Hospital in Zambia showed a 75% cure rate for women undergoing their first repair, compared with a 64% cure rate for women who had undergone 1 or more previous repairs.[9] Although both studies were of limited value because *successful closure* was poorly defined, similar conclusions were reached in that initial repair was determined to have the highest probability of success, and less scarring was associated with better surgical outcome.

The surgery is not without its own complications. The more complicated fistulas and those including RVF may require multiple attempts before continence is achieved. Other postoperative complications include hemorrhage, infection, anuria, wound breakdown, residual incontinence, hematometra, and urethral and vaginal strictures.[2] Postoperative rehabilitation for nerve palsies has not adequately been studied.

OF has gained interest from Western medical facilities primarily in the form of brief medical missions to cure women with OFs. Some unsupervised medical missions have been called *fistula tourism*. Surgeons who travel to these remote regions may be unfamiliar with OF and may not have adequate training to repair the fistula. They may also lack experience in working with minimal surgical equipment, resources, and poor operating conditions. Often these missions are brief in duration, and complex repairs may be performed on women who will not receive appropriate postoperative care. These medical missions also do not solve the issue of sustainability that is needed to provide a permanent solution. The impact of these missions therefore remains uncertain.[10,11]

Conclusions

OF is known as the "near miss" of maternal mortality, and programs that target the reduction of maternal mortality will also impact OF rates. Effective programs that include family planning, prenatal care, safe labor and delivery, and postpartum care are an important start. Also needed are interventions that focus on improving access to maternal health care, emergency obstetric care, and increased rates of cesarean delivery when indicated. Outreach programs should increase awareness of this condition and establish reliable means of transportation to medical facilities. Other programs should focus on increasing the minimum age of marriage, keeping girls in school, and improving their overall nutritional status.

Fistula centers, such as the Addis Ababa Fistula Hospital in Ethiopia, have also focused on preventing recurrent fistulas. They discharge cured patients with strict instructions that in their next pregnancy they must travel to a nearby health center when they are close to term in order to undergo a cesarean delivery. More facilities like this are needed. Hospitals must also train their surgeons in the repair of simple and complex fistulas, and governments must provide adequate OF facilities with postoperative rehabilitation programs. With

Main Points

- Obstetric fistula is entirely preventable; prolonged obstructed labor is estimated to account for 76% to 97% of cases.
- The World Health Organization estimates that more than 2 million women live with obstetric fistula and up to 100,000 new cases occur each year. However, these figures may be severe underestimates.
- Along with urinary and/or fecal incontinence, women with obstetric fistula are at risk for other urologic diseases such as renal failure, gynecologic sequelae such as vaginal stenosis and infertility, and neurologic disorders including foot drop. The most devastating consequence is the impact obstetric fistula can have on their psychosocial life.
- Effective programs that include family planning, prenatal care, safe labor and delivery, and postpartum care are needed to reduce obstetric fistula rates. Also needed are interventions that focus on improving access to maternal health care, emergency obstetric care, and increased rates of cesarean delivery when indicated.

renewed focus on reaching the United Nations Millennium Development Goals of reducing child mortality by 66% and maternal mortality by 75%, governments will inadvertently reduce OF. ■

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